

### **Amendments to the Specification:**

**Please replace the fifth complete paragraph on page 2, lines 14-26, with the following amended paragraph:**

In a preferred embodiment, the attribute is the power level of the monitored signals. During the monitoring step, power level calculations are performed to determine the power level of the monitored signals. This is achieved by generating an envelope following the power level of the monitored signals. The envelope is generated by an infinite impulse response (IIR) lowpass filter. The IIR lowpass filter generates the envelope by solving the equation:

$$\text{AbsY} = (1 - \alpha) * \text{AbsY} + \alpha * \text{AbsY}_0$$

where  $\alpha$  is a parameter of the IIR filter, Y is the power level of the current monitored signal, Y<sub>0</sub> is the power level of the previously monitored signal and AbsY and AbsY<sub>0</sub> are the absolute values of the power levels Y and Y<sub>0</sub> respectively.

**Please replace the first complete paragraph on page 6, lines 4-22, with the following amended paragraph:**

Appendix A shows psuedo-code representing the echo suppression algorithm executed by the echo suppressor 32. The echo suppression algorithm, in response to signals to be broadcast by the handset speaker 20, invokes a power level calculation routine (see Appendix B). During execution of this routine, an envelope following the power level of signals to be broadcast by the handset speaker is generated using an infinite impulse response (IIR) lowpass filter 61. The IIR filter 61 generates the envelope by estimating the long-range average of the absolute value of the signal to be broadcast and is of the form:

$$\text{AbsY} = (1 - \alpha) * \text{AbsY} + \alpha * \text{AbsY}_0 \quad (1)$$

$\alpha$  is an IIR filter parameter and is chosen to provide a fast attack time and a slow decay time for the IIR filter 61. In the present embodiment, two different values for  $\alpha$  are used, namely  $\alpha_{\text{fast}}$  and  $\alpha_{\text{slow}}$  depending on the power level of the signal to be broadcast by the handset speaker 20. Figure 3 shows an example of an envelope 64 generated by the echo suppressor 32 in response to a signal to be broadcast by the handset speaker where  $\alpha_{\text{fast}} = 1$  and  $\alpha_{\text{slow}} = 2^{-12}$ . As will be appreciated, by choosing these values for  $\alpha$ , the echo suppressor generates an envelope that reacts fast to signals to be broadcast by the handset speaker 20. The slow decay time on the other hand compensates for small signal delays and reduces the switching effect when the signals fade. Y is the power level of the current monitored

signal and  $Y_0$  is the power level of the previously monitored signal.  $AbsY$  and  $AbsY_0$  are the absolute values of power levels  $Y$  and  $Y_0$  respectively.

**Please replace Appendix A on page 10 with the following replacement Appendix A:**

Inputs: transmitted\_signal(1), received\_signal (2)

Output: output\_signal going to the network (3)

Start:

Calculate the power of the signal to be broadcast by the handset speaker;

$AbsY = (1 - \alpha) * AbsY + \alpha * abs(transmitted\_signal \ Y_0);$

Chose the mask that corresponds to the power of the signal to be broadcast by the handset speaker;

Mask = Mask\_select(AbsY);

Output\_signal = received\_signal AND Mask;

Go to Start;

where:

transmitted\_signal is the signal received by the telephone device to be broadcast by the handset speaker;

received\_signal is the echo signal picked up by the handset microphone and voice signals picked up by the handset microphone;

alpha is an IIR filter parameter; and

$Y$  is the power level of the received signal or currently monitored signal;

$Y_0$  is the power level of the transmitted\_signal or previously monitored signal; and

Output\_signal is the signal output to the network by the telephone device.

Please replace Appendix B on page 11 with the following replacement Appendix B:

### **Power Level Calculation Routine**

```
if AbsY > AbsY0
    AbsY=(1- alpha_slow)*AbsY + alpha_slow *AbsY0;
else
    AbsY=(1- alpha_fast)*AbsY + alpha_fast *AbsY0;
end
```

where:

AbsY and AbsY<sub>0</sub> are the absolute values of the power levels Y and Y<sub>0</sub> respectively

### **Mask Selection Routine**

```
Mask_select:
    Mask = 64512;      %fc00 or 10 zeros (1111110000000000)
    if AbsY < 4063
        Mask = 65024;  %fe00 or 9 zeros
    end
    if AbsY < 2031
        Mask = 65280;  %ff00 or 8 zeros
    end
    if AbsY < 1015
        Mask = 65408;  %ff80 or 7 zeros
    end
    if AbsY < 507
        Mask = 65472;  %ffc0 or 6 zeros
    end
    if AbsY < 253
        Mask = 65504;  %ffe0 or 5 zeros
    end
    if AbsY < 126
        Mask = 65520;  %fff0 or 4 zeros
    end
    if AbsY < 63
        Mask = 65528;  %fff8 or 3 zeros
    end
    if AbsY < 31
        Mask = 65532;  %fffc or 2 zeros
    end
    if AbsY < 15
        Mask = 65534;  %fffe or 1 zero
    end
end
```